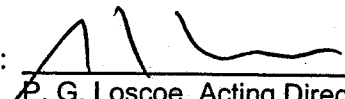
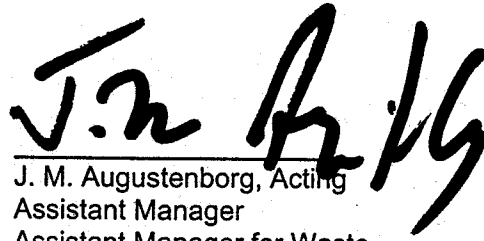


Concurrence:


P. G. Loscoe, Acting Director
Spent Nuclear Fuels Project
Division,
U.S. Department of Energy,
Richland Operations Office

Approved by:


J. M. Augustenborg, Acting
Assistant Manager
Assistant Manager for Waste
Management,
U.S. Department of Energy,
Richland Operations Office

Concurrence is granted
upon the condition that the
comments regarding the
identified requirements and
assumptions and strategic goals,
provided prior to this formalization,
are fully incorporated ~~as~~ resolved on
September 27, 1999.

4.2.3 SNF Mission Area

The Spent Nuclear Fuel (SNF) mission on the Hanford Site supports the Hanford Mission to clean up the Site by providing safe, economic, environmentally sound management of Site Spent Nuclear Fuel (SNF) in a manner which stages it to final disposition, and deactivating the associated facilities.

4.2.3.a Mission Area Structure

- Spent Nuclear Fuel Project (RL-WM01)
- Canister Storage Building Operations (RL-WM02)

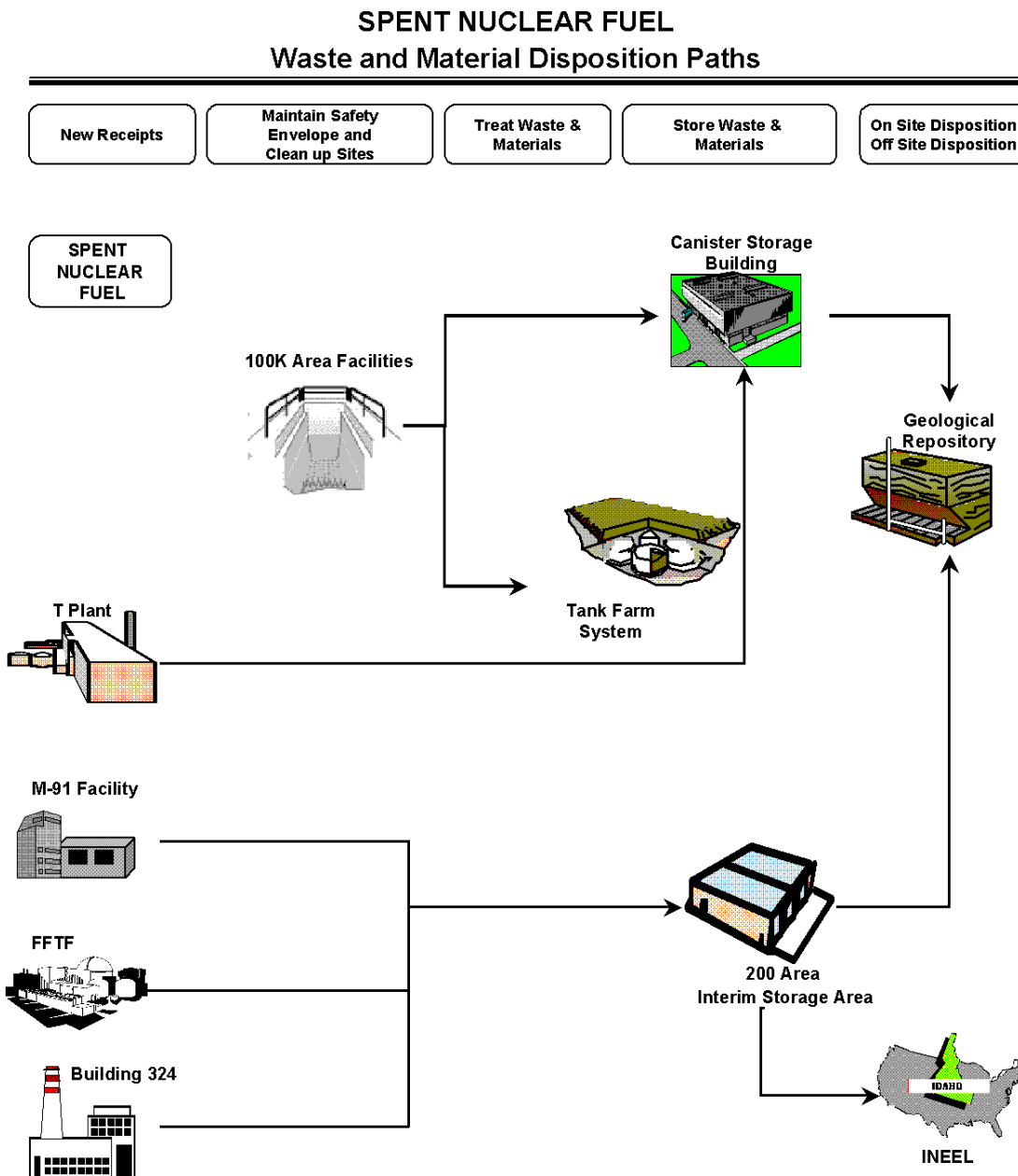
4.2.3.b Hanford Strategic Plan Goals

The Waste, Material, and Geographic Area Goals contained in the Hanford Strategic Plan (DOE/RL-96-92), represent planning assumptions around which the Hanford Environmental Management effort is structured. Each Mission Area and Project partially support each of these goals, per scope of work described in the Prime Contracts. As an aggregate, all Mission Areas and Projects will fulfill the requirements of the Hanford Strategic Plan. As such, the Goals identified in this section cover only the goals directly supported by that specific Mission Area. Further details are contained in the Project planning documents. As records-of-decision are issued, these Goals will be amended in future revisions of the Hanford Strategic Plan.

- Remove and/or stabilize spent fuel, surplus facilities, and waste sites to protect groundwater and the Columbia River and to ensure protection of people, the environment, and natural/cultural resources. Pending Congressional action on the Wild and Scenic River designation, use will continue to be restricted; sensitive ecological, cultural, and native American resources will be protected.
- Groundwater remains restricted for a yet to be determined period pending decisions on final attainable cleanup levels. Remediation actions will protect the Columbia River and the near-shore environment, reduce contamination entering the groundwater, and control the migration of plumes that threaten groundwater quality beyond the boundaries of the Central Plateau.
- Safe, stable, secure onsite storage will be provided for all nuclear materials pending decisions on final disposition or until beneficial offsite uses are identified. Facilities without identified future uses will be transitioned to low-cost, stable deactivated conditions (requiring minimal surveillance and maintenance) pending eventual D&D and removal or closure.
- Surplus facilities will be decommissioned and decontaminated sufficiently to enable removal or closure through entombment.
- Spent nuclear fuels will be prepared and packaged as necessary for interim, dry storage onsite, and shipped offsite for disposal in a national repository.

4.2.3.c Technical Logic

Figure 4-4 SNF Material/Flow Logic



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4.2.3.d Facility Life-Cycle Responsibility Assignments

Table 4-32 Spent Nuclear Fuel Facility Life-Cycle Responsibility Assignments

Asset	Life Cycle Phase						
	Program Planning	Pre-Conceptual	Conceptual	Execute	O&M	Close Out	
						Post Ops	D&D
100 K Area Facilities	RL-WM01				RL-WM01		RL-ER05 RL-ER06
105KE	RL-WM01				RL-WM01		RL-ER06
105KW	RL-WM01				RL-WM01		RL-ER06
119KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1614KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
165KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
165KW	RL-WM01				RL-WM01		RL-ER06
166AKE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1705KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1706KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1706KEL	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1706KER	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1713KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1713KW	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1714-KW	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1714KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1717K	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1724-K	RL-WM01				RL-WM01	RL-WM01	RL-ER06
181KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183-2KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183-3KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183-4KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183.1KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183.5KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183.6KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
183KW	RL-WM01				RL-WM01		RL-ER06
1908K	RL-WM01				RL-WM01	RL-WM01	RL-ER06
1908KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
190KE	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO101	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO102	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO214	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO236	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO237	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO293	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO382	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO401	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO402	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO420	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO442	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO907	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO928	RL-WM01				RL-WM01	RL-WM01	RL-ER06
MO969	RL-WM01				RL-WM01	RL-WM01	RL-ER06
Canister Storage Building	RL-TW09 RL-WM01			RL-TW09 RL-WM01	RL-TW09 RL-WM01 RL-WM02	RL-TW09 RL-WM02	RL-WM02
212H	RL-WM01			RL-WM01	RL-WM02	RL-WM02	RL-WM02
200 Interim Storage Area (ISA)	RL-WM01			RL-WM01	RL-WM01 RL-WM02	RL-WM02	RL-WM02

* RL PBS Identifier Index:

RL-ER05 - Surveillance & Maintenance
 RL-ER06 - Decontamination & Decommissioning
 RL-TW09 - Immobilized Tank Waste Storage & Disposal
 RL-WM01 - Spent Nuclear Fuel Project
 RL-WM02 - Canister Storage Building Operations

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TABLE 4-33 Spent Nuclear Fuel Facility Life-Cycle Responsibility Assignments for Waste Sites

Waste Site	Status	Life Cycle Phase		
		S&M	Post Ops	Remedial Action
RoR Soil Site Operable Units	Active		RL-ER01 RL-ER05	RL-ER01 RL-ER07 RL-ER09
116-K-3, 1904-K Outfall Structure, 1908-K Outfall Structure	Active	RL-WM01	RL-ER01	RL-ER01
100-K-2, 118-K-2, 118-K-2 Sludge Burial Ground, Burial Area	Active	RL-WM01	RL-ER01	RL-ER01
100-K-29, 183-KE Sandblasting Site	Active	RL-WM01	RL-ER01	RL-ER01
100-K-35, 183-KE Acid Neutralization Pit	Active	RL-WM01	RL-ER01	RL-ER01
100-K-36, 1706-KE Chemical Storage Facility Dry Well	Active	RL-WM01	RL-ER01	RL-ER01
100-K-37, 1706-KE Sulfuric Acid Tank	Active	RL-WM01	RL-ER01	RL-ER01
100-K-38, 1706-KE Caustic Soda Tank	Active	RL-WM01	RL-ER01	RL-ER01
100-K-4, 1706-KE Wet Fish Studies Ponds and Valve Pit	Active	RL-WM01	RL-ER01	RL-ER01
100-K-43, KW Basin, 105-KW Fuel Storage Basin, K West Basin, Irradiated Fissile Material Storage	Rejected(Proposed)	RL-WM01		
100-K-46, 119-KE French Drain, Drywell	Active	RL-WM01	RL-ER01	RL-ER01
100-K-47, 1904-K Process Sewer	Active	RL-WM01	RL-ER01	RL-ER01
100-K-50, 1725-K & 1726-K Sanitary Sewer System Holding Tank	Active	RL-WM01	RL-ER01	RL-ER01
100-K-51, 105-KE 90-Day Waste Accumulation Area, 100K 90-Day Waste Storage Facility	Active	RL-WM01	RL-ER01	RL-ER01
100-K-52, 1706-KE Wet Fish Studies Laboratory	Rejected	RL-WM01		
100-K-58, 100-KE Water Treatment Facilities Underground Pipelines	Active	RL-WM01		
100-K-67, 165-KE Power Control Building	Active	RL-WM01	RL-ER01	RL-ER01
100-K-68, 105-KE Pump Gallery and Catch Tank, D Sump	Active	RL-WM01		
100-K-69, 105-KE Sump "C"	Active	RL-WM01		
100-K-7, 165-KE Ethylene Glycol Tanks, 165-KE-E and 165-KE-W	Rejected	RL-WM01		
100-K-70, 105-KE Waste Storage Tank, Holding Tank	Active	RL-WM01		
100-K-71, 105-KE Collection Box	Active	RL-WM01		
100-K-72, 105-KW Pump Gallery and Catch Tank, D Sump	Active	RL-WM01	RL-ER01	RL-ER01
100-K-73, 105-KW Collection Box	Active	RL-WM01		
100-K-74, 105-KW Waste Storage Tank, Holding Tank	Active	RL-WM01		
100-K-75, 105-KW Sump "C"	Active	RL-WM01		
116-KE-6A, 1706-KE Condensate Collection Tank, 1706-KE Waste Treatment System	Active	RL-WM01	RL-ER01	RL-ER01
116-KE-6B, 1706-KE Evaporation Tank, 1706-KE Waste Treatment System	Active	RL-WM01	RL-ER01	RL-ER01
116-KE-6C, 1706-KE Waste Accumulation Tank, 1706-KE Waste Treatment System	Active	RL-WM01	RL-ER01	RL-ER01
116-KE-6D, 1706-KE Ion Exchange Column, 1706-KE Waste Treatment System	Active	RL-WM01	RL-ER01	RL-ER01
120-KE-8, 165-KE Brine Pit, 165-KE Brine Mixing Tank	Active	RL-WM01	RL-ER01	RL-ER01
126-KE-2, 183-KE Liquid Alum Storage Tank #2	Active	RL-WM01	RL-ER01	RL-ER01
1607-K1, 1607-K1 Septic Tank and Associated Drain Field, 124-K-1, 1607-K1 Sanitary Sewer System, 1607-K1 Septic Tank	Active	RL-WM01	RL-ER01	RL-ER01
1607-K4, 1607-K4 Septic Tank and Associated Drain Field, 124-K-2, 1607-K4 Sanitary Sewer System, 1607-K4 Septic Tank	Active	RL-WM01	RL-ER01	RL-ER01
1607-K5, 1607-K5 Septic Tank and Associated Drain Field, 124-KE-2, 1607-K5 Sanitary Sewer System, 1607-K5 Septic Tank	Active	RL-WM01	RL-ER01	RL-ER01
1607-K6, 1607-K6 Septic Tank and Associated Drain Field, 124-KW-1, 1607-K6 Sanitary Sewer System, 1607-K6 Septic Tank	Active	RL-WM01	RL-ER01	RL-ER01
CP Soil Site Operable Units	Active		RL-ER02 RL-ER05	RL-ER02 RL-ER07
HWVP, Hanford Waste Vitrification Plant	Active	RL-WM01		RL-ER02
UPR-200-E-65, UN-216-E-65, 241-A-151 Diversion Box Radioactive Contamination, UN-200-E-65	Rejected(Proposed)	RL-WM01		
UPR-200-E-67, UN-216-E-67, Radioactively Contaminated Pipe Encasement, UN-200-E-67	Rejected(Proposed)	RL-WM01		
UPR-200-W-40, Line Break at 241-TX-154, UPR-200-W-38, UPR-200-W-160, 216-T-30, UN-200-W-40,	Rejected(Proposed)	RL-WM01		
UPR-200-E-70, Radioactive Contamination from Jumper Removal, UPR-216-E-70, UN-200-E-70	Rejected(Proposed)	RL-WM01		
CC Soil Site Operable Units	Active		RL-ER02	RL-ER02 RL-ER07
600-212, Relocatable Latrine Facility Holding Tank System	Active	RL-WM01	RL-ER02	RL-ER02

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The 'Rejected' and 'Completed' waste sites are part of the Project Hanford Management Contract (PHMC), but require no additional work from the PHMC team. When they are removed from the contract via direction from the RL Contracting Officer representative, they will be removed from this specification.

* RL PBS Identifier Index:

RL-ER01 - 100 Area Source Remedial Action
RL-ER02 - 200 Area Source Remedial Action
RL-ER05 - Surveillance & Maintenance
RL-ER07 - Long Term Surveillance & Maintenance
RL-ER09 - N Area Deactivation
RL-WM01 - Spent Nuclear Fuel Project

4.2.3.e Performance Measures

The following are "process" performance measures for SNF. These measures monitor the movement and processing of SNF and other waste materials as presented in this mission area's Technical Logic Diagram:

- Amount of fuel stabilized during period. [Includes annual throughput of K Basins SNF retrieved from the basin and processed through CVD and Na bonded FFTF SNF repackaged in CSB and transferred to INEEL for disposition.]
- Amount of fuel in stabilization process, not yet stabilized. [Includes K Basin SNF not yet retrieved and sludge.]
- Amount of stable fuel, not disposition ready. [Cumulative inventory of SNF processed through Cold Vacuum Drying.]
- Amount of fuel in disposition ready storage. [Cumulative inventory of K Basins SNF processed through Cold Vacuum Drying and sitewide SNF received for interim storage from other Hanford facilities.]

For each mission-level performance measure that monitors the amount of materials moved or processed, the associated MYWP should report the:

1. Quantity moved or processed in the measurement period. Quantity should be measured using mass (or volume).
2. % of the initial inventory this represents.
3. % of the inventory that has been removed/processed to date (since the inception of cleanup).

4.2.3.1 Spent Nuclear Fuel Project

4.2.3.1.1 Project Description Summary

This portion of the Spent Nuclear Fuel (SNF) Mission supports the Hanford Site Mission to clean up the Site by providing safe, economic, environmentally sound management of Site SNF in a manner which stages it to interim on-site storage, initiates interim storage, and deactivating the 100 K Area facilities. The SNF scope includes:

All the Hanford Site SNF, as defined in Hanford Spent Fuel Inventory Baseline,

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WHC-SD-SNF-TI-001, except irradiated fuel material classified otherwise by formal direction from RL. Sludge is considered SNF until removed from the K Basins.

K Basin facilities, associated operations, and equipment. This includes the basins, solid and particulate matter, water and associated basin and auxiliary support equipment and buildings, as well as N reactor and Single-Pass Reactor (SPR) fuel contained in the K Basins.

All the Hanford Site SNF stabilization, handling, and onsite transfer activities to achieve safe, interim storage. Retrieve all SNF at the K Basins for packaging, stabilization, and transportation to interim storage. Remove and transfer sludge and debris at the K Basins to disposition.

All new or modified Hanford Site SNF facilities (Cold Vacuum Drying (CVD), Canister Storage Building (CSB)) associated with receipt, stabilization and interim storage before staging for final disposition. Acquire SNF interim storage facilities. Operate interim storage facilities until the SNF from the K Basins is stored in a dry configuration.

Transfer and transport of SNF from custodian facilities to SNF facilities as identified in formal agreements with current fuel custodians. Manage and integrate activities associated with SNF from locations on the Hanford Site other than the K Basins, including the other SNF at the Hanford Site. Operating the complex which includes the CSB and 200 Area Interim Storage Area until the SNF from the K Basins is stored in a dry configuration..

Management and integration of activities at the 100 K Area until the SNF, debris, and sludge have been removed from the K Basins. Characterization of the SNF and sludge at the K Basins. Removal of the water at the K Basins until the SNF, sludge, and debris are removed.

Accomplishment of all SNF activities safely, efficiently, in compliance with applicable regulations, and with the involvement of stakeholders.

Deactivation of the K Basins and interim stabilization and storage facilities to a condition that meets requirements for transfer to the organization(s) responsible for final disposition of these facilities. Performance of activities that foster facility deactivation at no additional cost to SNF. Perform deactivation planning associated with existing and future SNF Project facilities.

4.2.3.1.2 Life-Cycle Material and Waste Flow

Table 4-34 Spent Nuclear Fuel Project Waste/Material Flow (In)

Major Facility	Category	Period	Value	Units
100 K Area Facilities	LLW (Liquid)	2000 - 2000	37.8	cubic meters
Canister Storage Building	Spent Nuclear Fuel (SNF)	2001 - 2003	2120	MTHM
200 Interim Storage Area (ISA)	Spent Nuclear Fuel (SNF)	2000 - 2013	13.6	MTHM

Table 4-35 Spent Nuclear Fuel Project Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
100 K Area Facilities	CH LLMW I	2000 - 2006	35.2	cubic meters
	CH LLW I	2000 - 2006	861.0	cubic meters
	CH LLW III	2000 - 2000	8.76	cubic meters
	CH TRU	2000 - 2006	223.0	cubic meters
	HAZ	2000 - 2003	20.5	cubic meters
	LLW (Liquid)	2000 - 2003	28000	cubic meters

Table 4-35 Spent Nuclear Fuel Project Waste/Material Flow (Out) (Continued)

Major Facility	Category	Period	Value	Units
	RH TRU	2001 - 2006	46.9	cubic meters
	RH TRUM	2003 - 2004	611.0	cubic meters
	Spent Nuclear Fuel (SNF)	2001 - 2003	2100	MTHM
	Spent Nuclear Fuel (SNF)	2004 - 2005	612.0	cubic meters
	Waste Water	2001 - 2007	10900	cubic meters

4.2.3.1.3 Facility Life-Cycle Requirements

- Requirements

- The SNF Project will transfer secondary waste streams generated by project activities (such as solid LLW, TRU solid waste, and liquid effluents) for storage or disposal on the Hanford Site.
- Remove sludge and debris from the K Basins for disposition with other Hanford Site wastes and materials.
- Spent Nuclear Fuel shall be removed from the K Basins.
- Sludge (50 to 70 m3) shall be removed from the K Basins. Sludge shall be considered SNF until it has been removed from the K Basins. Sludge that is removed from the K Basins by a sludge retrieval process shall be handled as mixed waste after removal from the basins.
- Debris shall be removed from the 100 K Area Facilities.
- Contaminated equipment shall be removed from the 100 K Area Facilities.
- Onsite interim safe, stable storage of nuclear materials shall be provided.
- Reactors on the River gaseous effluent releases shall be monitored.
- 100 K Area Facilities shall be surveilled and maintained within the approved safety envelope.
- CSB and MCOs shall be designed for a 40 year interim storage period.
- SNF shall be emplaced in the CSB for safe, cost effective interim storage until a federal repository is available (~40 years).
- Spent Nuclear Fuel removed from the K Basins shall be stabilized for cost effective, interim, dry, onsite storage.
- Spent Nuclear Fuel removed from the K Basins shall be packaged for cost effective, interim, dry, onsite storage.
- Accomplish fuel conditioning in accordance with project plans which currently include a cold-vacuum drying process, located in the 100K area. Construct the Cold-Vacuum Drying Facility and make it available for fuel transfer. Transfer the facility(s) to the Environmental Restoration Project for D&D on completion of operations.
- Water contained in the 100 K Area Facilities shall be treated to maintain water quality and safe conditions within the basins and to reduce tritium levels.
- The Contractor shall provide management and integration of activities required to reduce the risk from and the cost of spent fuel on the site. Several types of spent fuel are present at Hanford. The largest volume of material is the spent N-Reactor fuel currently stored in K Basins. Almost 7,500 canisters of fuel containing 2100 MT are stored at the 100-K Basins, approximately 3,800 of them in the KW Basin, and approximately 3,600 in the KE Basin.
- Complete, contingent on the completion of the National Environmental Policy Act (NEPA) documentation, the design and construction of the Canister Storage Building (CSB) to be used for dry storage of the K Basin spent fuel; take actions to make it operational, and operate the facility.

· POLLUTION PREVENTION/WASTE MINIMIZATION

The Contractor shall:

(1) Minimize pollution and the generation of wastes by implementing a DOE-approved pollution prevention and waste minimization program at the Hanford Site. This program shall ensure that waste generators will bear the disposal costs associated with their newly generated wastes. The program shall be designed within the Project Hanford structure, and address wastes which remain within the realm of a specific project in this structure, as well as wastes which move from one project to another. There shall be a mechanism to ensure that Pollution Prevention Opportunity Assessments are developed and fully considered.

(2) Develop this program using available data and resources to the extent practicable, including draft Pollution Prevention Program Integration Guidance, waste generation reports produced by the Office of Pollution Prevention within the Environmental Management program, and the "Sitewide Systems Analysis" required by milestone M-33 of the Tri-Party Agreement. Source reduction shall be first priority, followed by environmentally safe recycling. Treatment to reduce quantity, toxicity, and/or mobility will be considered only when prevention or recycling are not possible or practical. Environmentally safe disposal is the last option.

● Planning Assumptions

- Spent Fuel in Central Plateau - 1 Spent fuels consolidated in the 200 Area in safe, stable, cost-effective interim storage pending national decisions on their ultimate disposition.
- Facilities in Central Plateau - 2 Provide safe, stable, interim storage for nuclear materials in the 200 Area pending decisions on their ultimate disposition.
- Spent Fuel in South 600 Area - 1 Spent fuels (light water reactor) removed to interim storage in 400 Area pending availability of 200 Area interim storage.
- Facilities in South 600 Area - 7 Transfer Special Nuclear Material to 200 Area for interim storage.
- Nuclear materials shall be consolidated in the Central Plateau for interim storage pending ultimate disposition.
- Facilities under the stewardship of the Spent Nuclear Fuel Project shall be transitioned to a low cost, stable, deactivated condition.
- 100 K Area Facilities shall be stabilized and cleaned sufficient to transition to decontamination and decommissioning.
- Canister storage building shall be constructed.

4.2.3.1.4 Project Safety Authorization Basis/NEPA and Permits

The SNF Project shall manage all activities in accordance with approved Authorization Basis documents and approved S/RIDs. The following Authorization Basis documents, their associated safety evaluation reports, and S/RIDs apply.

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- "K Basins Safety Analysis Report," WHC-SD-SNF-WM-062, including the referenced "K Basin Hazard Categorization," WHC-SD-SNF-HC-001 (11/94), and any approved amendments thereto.
- "K Basins Technical Safety Requirements," WHC-SD-SNF-TSR-001, and any approved amendments thereto.
- All approved K Basins Safety Evaluation Reports
- Letter, J. D. Wagoner, RL to Mr. H. J. Hatch, President, Fluor Daniel Hanford, Inc. "Contract No. DE-AC06-96RL13200 - REMOVAL OF RESTRICTION REGARDING CRANE TROLLEY MOVEMENT," dated May 5, 1998 (98-SFD-089).
- Letter, J. D. Wagoner, RL, to Mr. H. J. Hatch, President, Fluor Daniel Hanford, Inc, "Contract No. DE-AC06-96RL13200 - APPROVAL OF K BASINS SAFETY ANALYSIS REPORT (SAR) WHC-SD-WM-SAR 062, REVISION (REV.) 3B AND K BASINS TECHNICAL SAFETY REQUIREMENTS (TSR) REV. 0-B," dated March 20, 1998 (98-SFD-063).
- Letter, J. D. Wagoner, RL, to Mr. R. D. Hanson, Acting President, Fluor Daniel Hanford, Inc, "Contract No. DE-AC06-96RL13200-Approval of Fuel Return Operations Using Chem Nuclear 1-13G Cask at the K East Basins South Load-Out Pit Evaluatons" dated August 25, 1998 (98-SFD-166).
- Letter, J. D. Wagoner, RL, to Mr. R. D. Hanson, Acting President, Fluor Daniel Hanford, Inc, "Contract No. DE-AC06-96RL13200-K Basins Safety Analysis Report (SAR) Annual Update," and attached Safety Evaluation Report (SER), dated September 18, 1998 (98-SFD-176).
- Letter, J. D. Wagoner, RL, to Mr. R. D. Hanson, Acting President, Fluor Daniel Hanford, Inc, "Contract No. DE-AC06-96RL13200-K Basins Safety Analysis Report (SAR) WHC-SD-WM-SAR-062, proposed Revision 3F, and K Basins Technical Safety Requirements (TSR) WHC-SD-SNF-TSR-001, proposed Revision 0-D, Drain Valve Unreviewed Safety Question (USQ) and Justification for Continued Operation (JCO)," and attached SER, dated September 18, 1998 (98-SFD-187).PAGE CHANGE K - 05/26/99
- Letter, J. D. Wagoner, RL, to Mr. R. D. Hanson, Acting President, Fluor Daniel Hanford, Inc, "Contract No. DE-AC06-96RL13200 -Replacement of Gaseous Chlorination System in 100K Area Potable Water System," and attached SER, dated September 30, 1998, (98-SFD-199).
- Letter, J. D. Wagoner, RL, to Mr. R. D. Hanson, President, Fluor Daniel Hanford Inc., "Contract No. DE-AC06-96RL13200 - Approval of Storage of Limited Amount of Fuel Material With Up To 1.25 Weight Percent (wt%) U235 Enrichland in the K-East (KE) Basin" and attached SER, dated October 30, 1998.
- Letter, K. A. Klein, RL, to Mr. R. D. Hanson, President, Fluor Daniel Hanford, Inc., "Contract No. DE-AC06-96RL13200 - Unreviewed Safety Question (USQ) Evaluation K-99-0280, Safety Analysis Report (SAR) Table 3-10 Loads and Loadout Pit Wall Separation" and attached SER, dated May 21, 1999 (99-SFD-131).

The SNF Project activities are subject to NEPA and shall comply with the NEPA ROD and equivalent CERCLA requirements. The following NEPA documents apply to the SNF Project.

- SNF K Basins Project Environmental Impact Statement Record of Decision (3/96).
- Environmental Permits obtained in the name of RL or FDH that include provisions applicable to SNF K Basins Project facilities and/or operations, including, but not limited to, permits issued under the authority of the Resource Conservation and Recovery Act, as amended; the Federal Water Pollution Control Act (Clean Water Act) as amended; the Toxic Substances Control Act, as amended; and the Clean Air Act, as amended.
- Comprehensive Environmental Response, Compensation, and Liability Act documents and Records of Decision that contain requirements applicable to SNF K Basins Project facilities

and/or operations.

- Resource Conservation and Recovery Act and Safe Drinking Water Act documents that contain requirements applicable to SNF K Basins Project facilities and/or operations.
- Voluntary compliance letters, notices of correction, notices of noncompliance, notices of violation, notices of penalty, administrative or consent orders, or other legal documents issued by an authorized agency delegated regulatory authority that contain requirements applicable to SNF Basins Project Facilities and/or operations, including subsequent approved revisions to referenced documents.

4.2.3.1.5 Tri-Party Agreement Requirements

- TPA.M.34.0.A Complete removal of spent nuclear fuel, sludge, debris, and water at DOE's K Basins. (Due Date 07/31/07)
- TPA.M.34.6.T.1 Initiate K West spent nuclear fuel canister cleaning operations. (Due Date 12/31/00)
- TPA.M.34.8 Initiate full scale K East Basin sludge removal. (Due Date 07/31/04)
- TPA.M.34.9.T.1 Complete K Basins rack and canister removal. (Due Date 12/31/04)
- TPA.M.34.10 Complete sludge removal from K Basins. (Due Date 08/31/05)
- TPA.M.34.11.T.1 Complete construction of K West Basin integrated water treatment system to support spent nuclear fuel removal. (Due Date 06/30/99)
- TPA.M.34.12 Complete construction of K East Basin integrated water treatment system to support spent nuclear fuel removal. (Due Date 02/28/01)
- TPA.M.34.13.A.T.1 Complete construction and installation of K West Basin Spent Nuclear Fuel Retrieval System. (Due Date 07/31/99)
- TPA.M.34.13.B.T.1 Complete construction and installation of K East Basin Spent Nuclear Fuel Retrieval System. (Due Date 11/30/00)
- TPA.M.34.14.A Complete K West Cask Facility Modifications. (Due Date 09/30/99)
- TPA.M.34.14.B.T.1 Complete K East Cask Facility Modifications. (Due Date 01/31/01)
- TPA.M.34.15.A.T.1 Complete two bays of the Cold Vacuum Drying Facility construction and installation. (Due Date 10/31/99)
- TPA.M.34.15.B.T.1 Complete remaining bay(s) of the Cold Vacuum Drying Facility construction and installation. (Due Date 06/30/00)
- TPA.M.34.16 Initiate Removal of K West Basin Spent Nuclear Fuel. (Due Date 11/30/00)
- TPA.M.34.17 Initiate Removal of K East Basin Spent Nuclear Fuel. (Due Date 11/30/01)
- TPA.M.34.18.A Complete Removal of all K West Basin Spent Nuclear Fuel. (Due Date 04/30/03)
- TPA.M.34.18.B Complete Removal of all K East Basin Spent Nuclear Fuel. (Due Date 12/31/03)
- TPA.M.34.19 Initiate removal, replacement, and treatment of contaminated K Basins water where tritium concentrations exceed 300,000 pCi/L. (Due Date 04/30/04)
- TPA.M.34.20 Complete removal, replacement, and treatment of contaminated K Basins water such that tritium concentration in the basin is decreased and is maintained at or below 300,000 pCi/L. This milestone could be satisfied by removing all water. (Due Date 10/31/05)
- TPA.M.34.21 Initiate full scale K West Basin water removal. (Due Date 09/30/04)
- TPA.M.34.22 Complete K West Basin water removal. (Due Date 09/30/05)
- TPA.M.34.23 Initiate full scale K East Basin water removal. (Due Date 10/31/05)

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- TPA.M.34.24 Complete K East Basin water removal. (Due Date 10/31/06)
- TPA.M.90.11 Complete Canister Storage Facility Construction. [Due Date: 12/31/2002]

4.2.3.1.6 Interfaces

TABLE 4-36 Spent Nuclear Fuel Project Interfaces

Project Title	Project Number	Interface
Hazardous Waste Disposal Contracts	EXTERNAL	Receives K Basin HAZ waste
Solid Waste Storage & Disposal	RL-WM03	Receives K Basin Deactivation, CH LLMW I Receives K Basin Deactivation, CH TRU Receives K Basin Deactivation, CH-LLW-I Receives K Basin Deactivation, RH TRU Receives K Basins, CH-LLW-I Receives K OPER, CH-LLMW-I Receives K OPER, CH-LLW-III Receives K OPER, RH-TRU Receives K OPER, RH-TRUM Receives K Project, CH LLW I Receives K PROJECT, CH-TRU
Solid Waste Treatment	RL-WM04	Provides PWR Core 2 Shipment Provides TRIGA Fuel to 200 Area ISA Receives K-Basin Sludge
Liquid Effluents	RL-WM05	Receives K Basin Deactivation Wastewater Receives K Basin Level Control Water
Analytical Services	RL-WM06	Provides Analyzed K-Basin spent nuclear fuel samples Provides Bioassay and Dosimetry Services for SNF Receives Analytical Laboratory Samples from SNF Receives In-Field Laboratory Samples from SNF Receives Spent nuclear fuel analytical samples.
Canister Storage Building Operations	RL-WM02	Receives K Basin SNF Transferred to CSB Receives Spent Nuclear Fuel from FFTF
324/327 Facility Transition	RL-TP08	Provides 324 Spent Nuclear Fuel
Surveillance & Maintenance	RL-ER05	Receives Safe & Compliant Deactivated 100 K Area Facilities

4.2.3.1.7 Requirements References

- DNFSBIP94-1, Defense Nuclear Facilities Safety Board, Implementation Plan 94-1"
- DOE/EIS-0222D, Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan"
- DOE/RL-89-10, Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), Revision 5"
- DOE/RL-96-92, Hanford Strategic Plan"

4.2.3.2 Canister Storage Building Operations

4.2.3.2.1 Project Description Summary

The Canister Storage Building Operations (CSB Operations) portion of the Spent Nuclear Fuel

(SNF) mission supports the Hanford Site Mission to clean up the Site by providing safe, economic, environmentally sound management of Site SNF in a manner which continues interim storage on-site to final disposition, and deactivating the associated facilities. The CSB Operations scope includes:

All the Hanford Site SNF is defined in Hanford Spent Fuel Inventory Baseline, WHC-SD-SNF-TI-001, except irradiated fuel material classified otherwise by formal direction from RL.

All new or modified Hanford Site SNF facilities associated with interim storage to final disposition.

Management and integration of activities associated with SNF from locations on the Hanford Site in accordance with approved Memorandums of Understanding (MOUs) and Project Agreements (PAs). Operate the complex which includes the CSB and 200 Area Interim Storage Area.

Staging of the Hanford Site SNF for final disposition. This may include additional configuring and packaging of the SNF to meet final disposition requirements, readying it for off-site transfer, and implementing transfer to organization(s) responsible for final disposition.

Accomplishment of all SNF activities safely, efficiently, in compliance with applicable regulations, and with the involvement of stakeholders.

Deactivation of the CSB and 200 Area ISA facilities to a condition that meets requirements for transfer to the organization(s) responsible for final disposition of these facilities. Perform activities that foster facility deactivation at no additional cost to SNF. Perform deactivation planning associated with existing and future SNF facilities. Deactivation activities associated with existing and future SNF facilities.

4.2.3.2.2 Life-Cycle Material and Waste Flow

Table 4-37 Canister Storage Building Operations Waste/Material Flow (In)

Major Facility	Category	Period	Value	Units
Canister Storage Building	Spent Nuclear Fuel (SNF)	2001 - 2003	2120	MTHM
200 Interim Storage Area (ISA)	Spent Nuclear Fuel (SNF)	2000 - 2013	13.3	MTHM

Table 4-38 Canister Storage Building Operations Waste/Material Flow (Out)

Major Facility	Category	Period	Value	Units
Canister Storage Building	Spent Nuclear Fuel (SNF)	2019 - 2040	2100	MTHM
200 Interim Storage Area (ISA)	Spent Nuclear Fuel (SNF)	2003 - 2018	29.4	MTHM

4.2.3.2.3 Facility Life-Cycle Requirements

- Requirements

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- SNF to be shipped offsite for final disposition at the national repository
- Maintain the 200 Area ISA within the authorized safety basis and in accordance with approved S/RIDs.
- Na-bonded FFTF Spent Nuclear Fuel shall be shipped to Idaho National Environmental and Engineering Laboratory for treatment and final disposition in accordance with schedules established by the national SNF Program.
- Central Plateau gaseous effluent releases shall be monitored
- Manage site-wide SNF in accordance with existing, DOE approved, Memoranda of Understanding (MOU).
- Onsite interim safe, stable storage of nuclear materials shall be provided.
- CSB and MCOs shall be designed for a 40 year interim storage period.
- Spent Nuclear Fuel removed from the 100 K Area Facilities shall be placed into cost effective, interim, dry, storage pending shipment to a federal repository (approximately 40 years).
- SNF shall be emplaced in the CSB for safe, cost effective interim storage until a federal repository is available (~40 years).
- Complete, contingent on the completion of the National Environmental Policy Act (NEPA) documentation, the design and construction of the Canister Storage Building (CSB) to be used for dry storage of the K Basin spent fuel; take actions to make it operational, and operate the facility.
- The Canister Storage Building shall be maintained in a safe and compliant mode until turnover to the D&D Phase as described in the CSB Closure Plan (TBD).
- The Canister Storage Building shall perform the activities necessary to place the system components into a safe, stable and environmentally sound condition pending final disposition as described in the CSB Closure Plan (TBD).
- The Canister Storage Building shall comply with the design criteria of ANSI N300-1975, Design Criteria for Decommission of Nuclear Fuel Reprocessing Plants. At the completion of its Operational Mission, the Canister Storage Building shall provide for decontamination of its system components and soils as described in the CSB Closure Plan (TBD).

- Planning Assumptions

- Spent Fuel in Central Plateau - 2 Spent fuels removed offsite for final disposition.
- Spent Fuel in South 600 Area - 2 Spent fuels (TRIGA and light water reactor) and applicable FFTF fuels removed from 400 interim storage area to 200 Area.
- Spent Fuel in South 600 Area - 3 Spent fuels (sodium-bonded EBR-II test assemblies) removed offsite for final disposition.
- Central Plateau high cost surplus facilities shall be transitioned to a low cost, stable, deactivated condition
- Central Plateau facilities other than processing facilities shall be dismantled.
- Facilities other than processing facilities shall be dismantled.
- Nuclear materials shall be consolidated in the Central Plateau for interim storage pending ultimate disposition.
- Transitioned facilities shall be decontaminated and decommissioned sufficiently to enable removal or closure through entombment
- Spent Nuclear Fuel removed from 100 K Area Facilities shall be shipped offsite for disposal in a national repository.
- Site Wide Spent Nuclear Fuel shall be shipped offsite for disposal in a national repository.

4.2.3.2.4 Project Safety Authorization Basis/NEPA and Permits

The SNF Project shall manage all activities in accordance with approved Authorization Basis documents and approved S/RIDs. The existing Authorization Basis documents for the Project will be amended appropriately for CSB Operations (WM-02) activities.

The SNF Project activities are subject to NEPA and shall comply with the NEPA ROD and equivalent CERCLA requirements. The following NEPA documents apply to the SNF Project, as amended, for Canister Storage Building Operations (RL-WM02) specific activities:

- Environmental Permits obtained in the name of RL or FDH that include provisions applicable to SNF Project facilities and/or operations, including but not limited to, permits issued under the authority of the Resource Conservation and Recovery Act, as amended; the Federal Water Pollution Control Act (Clean Water Act) as amended; the Toxic Substance Control Act, as amended; and the Clean Air Act, as amended.
- Comprehensive Environmental Response, Compensation, and Liability Act documents and Records of Decision that contain requirements applicable to SNF Project facilities and/or operations.
- Resource Conservation and Recovery Act and Safe Drinking Water Act documents that contain requirements applicable to SNF Project facilities and/or operations.
- Voluntary compliance letters, notices of correction, notices of noncompliance, notices of violation, notices of penalty, administrative or consent orders, or other legal documents issued by an authorized agency delegated regulatory authority that contain requirements applicable to SNF Project facilities and/or operations, including subsequent approved revisions to referenced documents.

4.2.3.2.5 Tri-Party Agreement Requirements

- None

4.2.3.2.6 Interfaces

TABLE 4-39 Canister Storage Building Operations Interfaces

Project Title	Project Number	Interface
National Geologic Repository	EXTERNAL	Receives Dispositioned Non-Defense Production Reactor SNF Receives Dispositioned Defense Production Reactor SNF
Idaho National Engineering Laboratory	EXTERNAL	Receives Sodium (Na) Bonded FFTF SNF
Immobilized Tank Waste Storage & Disposal	RL-TW09	Provides Excess Canister Storage Building
Solid Waste Treatment	RL-WM04	Provides PWR Core 2 Shipment Provides TRIGA Fuel to 200 Area ISA
Spent Nuclear Fuel Project	RL-WM01	Provides K Basin SNF Transferred to CSB Provides Spent Nuclear Fuel from FFTF
324/327 Facility Transition	RL-TP08	Provides 324 Spent Nuclear Fuel
ER Disposal Facility (ERDF)	RL-ER04	Receives Rubble from the 200 Area Interim Storage Facility Demolition Receives Rubble from the CSB Demolition

4.2.3.2.7 Requirements References

- DOE/EIS-0222D, Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan"
- DOE/RL-96-92, Hanford Strategic Plan"
- HNF-SD-WM-MAR-008, Rev. 3, Tank Waste Remediation System Mission Analysis (TWRS MAR)"